A REAPPRAISAL OF THE GENUS *CALLISTOPTERA* ENDERLEIN (PSOCOPTERA)

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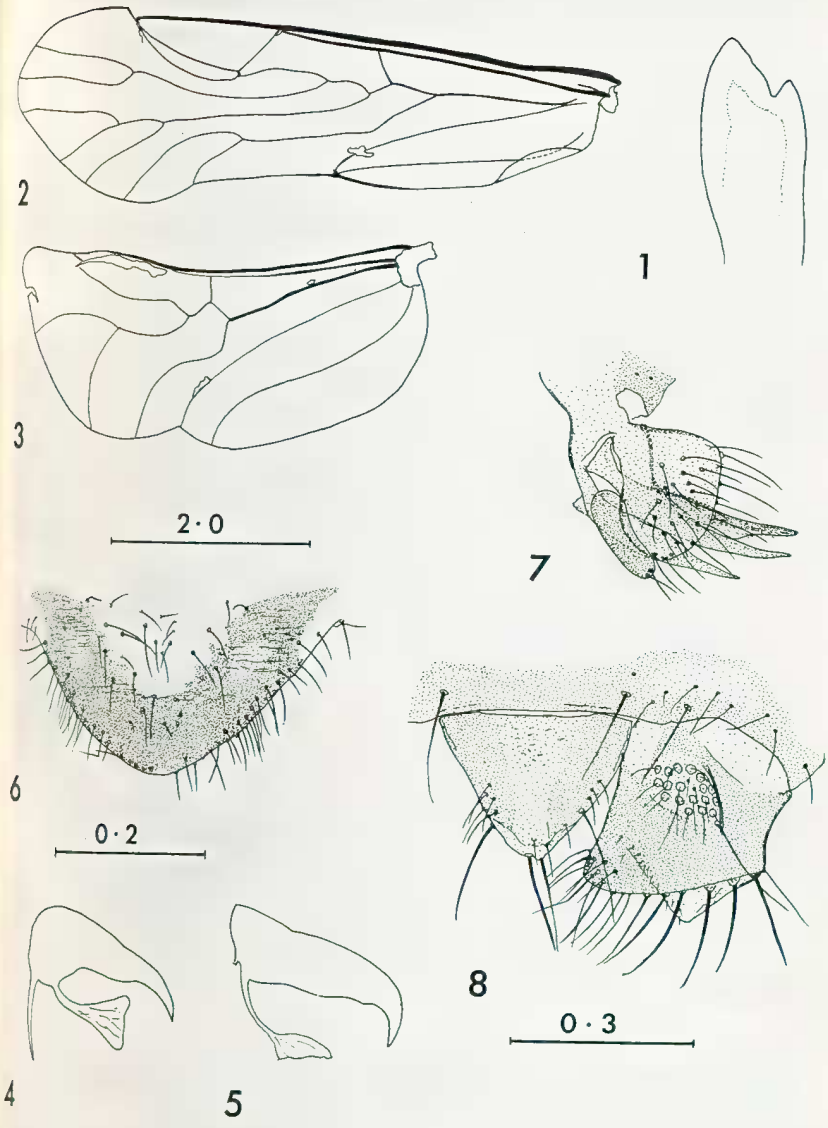
Abstract

The family affinities of *Callistoptera* are reassessed on the basis of a female specimen, which is described and illustrated. The genus has many features in common with Calopsocidae and Pseudocaeciliidae and, on balance of characters, is transferred from Epipsocetae to constitute a subfamily (Callistopterinae) of the Calopsocidae.

Callistoptera was raised by Enderlein (1903) to contain *C. anna* Enderlein (1903) from New Guinea. The genus has remained monotypic and has conventionally been placed in a family of its own, Callistopteridae, which (following Roesler 1944, although with little direct evidence) has been placed in the Group Epipsocetae, together with Epipsocidae, Ptiloneuridae and allied groups. Little is known of the genus, and later workers have relied entirely on Enderlein's description for inferences on its relationships: no other specimens have hitherto been reported in the literature. The type of *C. anna,* formerly in the Biro collection in Hungary, is believed destroyed. Although some types of species described by Enderlein (1903) were later sold to the British Museum (Natural History) (BMNH), that of *Callistoptera* is not listed in either Enderlein's letters or lists, or in the BMNH type catalogue. Whilst sorting Psocoptera in BMNH I came across two slides, made by the late J. V. Pearman, which together support many parts of a female specimen of *Callistoptera.* Much of the specimen is badly damaged, but sufficient characters are visible to demonstrate conclusively that the affinities of *Callistoptera* are not with the Epipsocetae. The Pearman specimen is without locality data, but in colour and general form of the forewing is clearly referable to *C. anna.*

The following is a brief description of this specimen: Head (overall shape not visible): labrum not bearing longitudinal thickened ridges; apex of lacinia (Fig. 1) with large outer and small inner tine; apical segment of maxillary palp elongate. Wing venation as in Figs 2 and 3: pterostigma joined by short crossvein to R_{2+3}, R_4 and R_5 separating before wing margin; M 3-branched; Cula and Culb separating well anterior to posterior margin of wing; hind wing broad, with R_s unbranched; hind margin lobed; Cul strongly sinuous. Tarsus 2-segmented; tarsal claws (Figs 4, 5) without subapical tooth, pulvillus broad. Mirror and rasp of Pearman's organ present on hind coxa. Basal hind tarsal segment with 20 ctenidia, apical hind tarsal segment with 2 ctenidia. Subgenital plate (Fig. 6) simple, rounded. Gonapophyses (Fig. 7) complete: external valve broad and setose; dorsal valve with two tapered lobes, spiculate; ventral valve with setose ovoid lobe. Epiproct tapered (Fig. 8). Paraproct (Fig. 8) with field of c20 trichobothria and two central setae lacking basal rosettes.



FIGS 1-8. *Callistoptera anna* Enderlein, ♀. (1) apex of lacinia; (2) forewing venation; (3) hindwing venation; (4 and 5) tarsal claws of legs II and III; (6) subgenital plate; (7) gonapophyses; (8) epiproct and paraproct. (Scales in mm, 7 and 8 to same scale).

Dimensions (mm): FW 5.37, HW 3.88, hind F 1.170, T 1.890, t_1 0.555, t_2 0.165, t_1/t_2 3.364.

It is clear that *Callistoptera* differs fundamentally from psocids grouped in the Epipsocetae, and the combination of characters present allies it with the Pseudocaeciliidae and the Calopsocidae. These two families are closely similar (Smithers, 1967): the main difference is the development of secondary venation in the most common genera of Calopsocidae, although this is limited to the radial region of the forewing in *Dirla* Navas (Java). Recent examination of a 'cotype' of *Calopsocus infelix* (Hagen) (New, unpublished) shows that it has a setose, bilobed apex to the subgenital plate, as have most Pseudocaeciliidae. It is likely that the 'setose ovoid lobe' to the ventral gonapophysis valve of *Callistoptera* does, in fact, represent an adpressed half of the apex to the subgenital plate, but this is not clear in the preparation. In *C. infelix*, and in two other *Calopsocus* species examined, the bilobed apex to the plate is connected only membranously to the anterior portion of the plate, and easily becomes detached: the anterior portion is then 'simply rounded'.

The following characters are shared between *Callistoptera*, Pseudocaeciliidae and Calopsocidae: forewing membrane setose (in only some genera of Pseudocaeciliidae), tarsal claw with broad pulvillus, gonapophyses complete, with dorsal and ventral valves lobed. The forewing vein Cu_2 is generally glabrous in Pseudocaeciliidae, but is setose in Calopsocidae and *Callistoptera*, and, whereas the areola postica is long and shallow in Pseudocaeciliidae, its form in *Callistoptera* is very similar to that in *Dirla* (Calopsocidae). *Callistoptera* differs from both families in having the hindwing vein R simple, rather than forked, and the hindwing shape is unusual in the Psocoptera. It seems increasingly unlikely as evidence accumulates that the Pseudocaeciliidae and Calopsocidae can be maintained as separate families, and *Callistoptera* must be included in the same assemblage. Although *Callistoptera* differs from genera currently placed in Calopsocidae in having no subapical tooth to the claw, wing characters strongly suggest that the genus should be allied with *Dirla*. On balance, pending more detailed investigation of the Calopsocidae, *Callistoptera* is here tentatively reassigned to a separate subfamily within the Calopsocidae (Callistopterinae) characterised by: (1) secondary forewing venation limited to linking of R_1 with R_{2+3}, (2) separation of R_4 and R_5 in the forewing, (3) R simple in hindwing and (4) tarsal claws without a subapical tooth.

Acknowledgement

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References

Enderlein, G., 1903. Die Copeognathen des indo-australischen Faunengebietes. *Ann. hist.-nat. Mus. hung.* 1: 179-344.

Roesler, R., 1944. Die Gattungen der Copeognathen. *Stettin. ent. Ztg.* 105: 117-166.

Smithers, C. N., 1967. On the relationships of the Calopsocidae (Psocoptera). *J. Aust. ent. Soc.* 6: 61-64.